OUR BOOKSHELF.

Subtropical Vegetable-Gardening. By P. H. Rolfs. Pp. xviii+309. (New York: The Macmillan Company; London: Macmillan and Co., Ltd., 1916.) Price 6*s.* 6*d.* net.

THE Rural Science Series, under the able editorship of Prof. L. H. Bailey, enjoys a deserved reputation for the high standard of excellence reached by its constituent volumes, and the one before us is no exception in this respect. Those whose lot is cast in the hotter parts of the world ought to be grateful to Mr. Rolfs for his practical and sensible work on subtropical vegetable growing. The author is the director of the experimental station of Florida. In America the exploitation of the land is looked on as a proposition of chief importance, and much enterprise, brains, and money are devoted to the solution of the multifarious problems that confront the cultivator.

Although Mr. Rolfs's book is designed primarily to meet the needs of the Florida people, it will be found, none the less, of great use in other parts of the tropical and subtropical belts, and the suggestive way in which difficulties of all kinds are indicated and disposed of should render it good reading to the dwellers of temperate zones as well.

The chapter on irrigation is an example to the point, for the water-question is certain to turn up in one form or another in all gardens, wherever they may be situated. The present writer has seen something like the subterranean methods of irrigation there described applied with remarkable results, even in this country. The cultural notes respecting the different vegetables are good, and the hints as to suitable manures, as well as the accounts of the various pests likely to be encountered, will be useful. In fact, the author is able to draw on a wealth of experience and knowledge which is at his disposal as head of an important experimental station, and we have no hesitation in cordially recommending the book to all whom it may concern, and furthermore in congratulating the author on the skill with which he has discharged his part of the matter.

Earliest Man. By F. W. H. Migeod. Pp. xii+133. (London: Kegan Paul, Trench and Co., Ltd., 1916.) Price 3*s.* 6*d.* net.

THESE are the musings and observations of one who has had long experience of life among primitive men and wild animals. While resident in the Gold Coast Colony the author not only devoted himself with well-known success to the study of the native languages, but was also a keen and thoughtful observer of the various tribes and their environment. He is, therefore, well equipped by first-hand knowledge for making suggestions as to the manner in which the earliest men may have gradually acquired the various habits and manifestations of intellect which distinguished them from their ape-like ancestors.

Mr. Migeod assumes that "if a creature of some species low in the scale of evolution can perform certain acts tending to operate on inanimate nature, another creature no lower, such as Pre-man, cannot be denied the possession of the same capacity. Further, if there are natural occurrences which can cause lower species to act out of their usual habits, and evince undoubtedly new mental activities, the same potential capacity must also be allowed in the case of Pre-man." He then discusses in order the possible origin of man's primary instincts, the making of implements, the use of fire, the beginning of speech, and his special social organisation, with the dawn of religion. He concludes with an interesting observation that when an ordinary monkey dies in the forest, the rest of the troop simply leaves the corpse and abandons the place, at least for a time; while when an ape such as a chimpanzee dies, its companions drop the body into a hole in the ground if one can be found, and in any case cover it with a great heap of sticks and branches.

Some of Mr. Migeod's conceptions of the laws and causes of organic evolution will by no means commend themselves to those who are accustomed to approach the subject from a wider point of view, but the novelty of the circumstances in which his little book was written makes it stimulating and interesting. A. S. W.

LETTERS TO THE EDITOR.

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of* NATURE. *No notice is taken of anonymous communications.*]

A Nomenclature for "Resistance Derivatives."

IT is evident from Mr. Bairstow's National Physical Laboratory papers that the notion of "resistance derivatives" is likely to play a permanent part in the experimental study of aeroplane motions, as well as in the theoretical rigid dynamics associated with them. It therefore becomes important to have a uniform nomenclature for these quantities which shall be independent of the choice of axes, and thus free from any possible ambiguity or source of difficulty.

The following names are used by Mr. Bairstow to distinguish the quantities depending on translation and rotation respectively:—

Translational.	*Rotational.*
Longitudinal.	Rolling.
Normal.	Yawing.
Lateral.	Pitching.

Now, it will be found that a possible word of four letters can be made by combining the first two letters of any one of these names with the first two of any other, and such words are not more objectionable than nine-tenths of the names that are introduced to cover new inventions. The nine resistance derivatives for the longitudinal oscillations will then be designated as follows:—

Lolo	Lono	Lopi.
Nolo	Nono	Nopi.
Pilo	Pino	Pipi.

While the names of the lateral derivatives will be:—

Lala	Laro	Laya.
Rola	Roro	Roya.
Yala	Yaro	Yaya.

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In the symbolic notations hitherto used the force component is always written first and the component of motion producing it is written after it as a suffix. It is therefore important that the same convention should be followed in the proposed nomenclature. Thus "Lopi" will stand for the X_r of my "Stability in Aviation," while "Pilo" stands for N_u. These words take no longer to write than $\log x$ or $\sin x$, and it would be easy to employ them in writing down formulæ, which would thereby gain much in clearness and suggestiveness.

G. H. BRYAN.

Plastic Flowing of Metals.

REGARDING the interesting research work published from time to time on the plastic flowing of metals under stress, might not these results have a bearing on the action of the fusion of wires by electric currents? For instance, it is well known to electrical engineers that erratic results are obtained by the use of the present formulæ for calculating the so-called "fusing" currents of wires.

At present, so far as the theory of electrical fuse wires is concerned, these theories deal merely with the generation of heat per unit length in the wire, and the loss of heat per unit length of the wire. Now, whatever the gain or loss of heat may be, that in itself is surely merely a cause increasing the plasticity of the wire, and thereby allowing the mechanical stresses acting on the wire to break it. Consequently, it would appear that any theory which omits all reference to the mechanical stresses set up by the heating is necessarily incomplete, and represents only a portion of the process.

At present, owing to lack of experimental data, it is impossible to say whether one can predict the fusing for any metal of given dimensions, but so far the results obtained seem more promising than by the older methods.

W. H. F. MURDOCH.

Westerlea, Mill Hill, Middlesex, November 1.

Optical Deterioration of the Atmosphere and Volcanic Eruptions.

IN NATURE of October 5 it is stated that the cause of the optical deterioration of the atmosphere in July and August "is for the time being still in doubt. Up to the present no reports of volcanic eruptions have come to hand from any part of the globe."

I wish to state that in July a strong outburst occurred of the Stromboli volcano, and that on July 4 there was an extraordinary eruption of fluid and incandescent lava to a great height, followed by a thick rain of lapilli and ashes. The emission of enormous columns of black cloud lasted many days.

A. RICCÒ.

R. Osservatorio di Catania ed Etneo,
October 30.

POSITION AND PROMISE OF BRITISH DYESTUFF MANUFACTURE.

THE question is frequently asked: "What is being done to produce British dyes?" Broadly, it may be said, the problem is being dealt with as efficiently as could be expected under present conditions. The difficulties may be roughly classified as follows:—

(1) The raw materials necessary for dyestuff manufacture are also in the main the raw materials from which high explosives are made, as well as other important products of the utmost value in the present war. It is only with great difficulty that the necessary raw materials are released by the Munitions and other Government Departments.

(2) There is an extraordinary shortage of adequately trained chemists. This shortage has been accentuated owing to the great demand for chemists in explosives works, the sending of chemists to the Front to study questions of gas poisons, etc., the recruiting for military service, and the failure of tribunals to appreciate that one clever chemist working at home may discover the means of saving thousands of our men and accounting for the destruction of thousands of the enemy.

(3) The problems to be solved by chemists are not only numerous, but many are exceedingly intricate and complex. The patents taken out by Germans in this country for many years past have been drawn up in an extraordinarily skilful manner by the help of our ablest lawyers, patent agents, and experts, so as to disguise in every conceivable way the method of arriving at the production of the patented article or its manufacture. This has been a scandal that has been allowed to gain force year by year. It is almost incredible that we should have allowed ourselves to be hoodwinked in this way, granting these great privileges to powerful German firms in order to restrain manufacture in this country.

(4) A serious difficulty will have to be faced in settling the question as to how to distribute amongst chemical manufacturers the many problems that await solution. It is most desirable to avoid overlapping of effort in research, etc., or quite unnecessary duplication of plant. Otherwise we shall have, say, one firm trying to solve too many problems and others, quite competent and suitable, making no efforts at all. These questions, it is proposed, shall be dealt with by some central authority, such as the recently formed Association of British Chemical Manufacturers, one of whose objects is to help manufacturers in this and many other desirable ways, *e.g.* to unite their efforts to fight the common foe rather than to compete with one another at home. Had such an association been in existence early in the war, these particular troubles would have been largely avoided, and much valuable time and money saved.

(5) The U.S.A. Government, although relatively a Free Trade one, has lately promised duties of more than 100 per cent. on dyestuffs and chemical products after the war so as to help America to build up what to all intents and purposes is for them, as it is for us, an infant industry. Our Government has so far resolutely refused any definite indication in that direction; and yet, without heavy protective duties, the chemical industry of the finer products, including dyestuffs, cannot possibly be built up and firmly established in this country.

(6) It is now quite clearly recognised that only very large undertakings can afford to carry on the kind of research that is essential for the success of the dyestuffs industry. This is perhaps the chief,

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